

WHAT IS CLAIMED IS:

1 1. A jig assembly for use with a work piece and a hand-held power
2 tool including a cutting bit, the jig assembly comprising:
3 a first member having a first opening and configured to be
4 positioned adjacent a first side of the work piece; and
5 at least one insert configured to fit within the first opening in
6 the first member and including a second opening;
7 wherein at least one of the first opening and second opening is
8 configured to allow a portion of the hand-held power tool to pass
9 therethrough to contact the work piece and to act as a guide for the hand-
10 held power tool as it removes material from the work piece.

1 2. The jig assembly of Claim 1, further comprising a second
2 member located adjacent a second side of the work piece.

1 3. The jig assembly of Claim 2, wherein the first member and the
2 second member are coupled together so that the work piece is positioned
3 intermediate the first and second members.

1 4. The jig assembly of Claim 3, wherein the first member and the
2 second member are coupled together with fasteners.

1 5. The jig assembly of Claim 4, wherein the fasteners are bolts and
2 nuts.

1 6. The jig assembly of Claim 5, wherein the first member includes
2 apertures configured to receive the bolts.

1 7. The jig assembly of Claim 1, wherein the first member is
2 substantially transparent.

1 8. The jig assembly of Claim 7, wherein the first member is formed
2 from polycarbonate.

1 9. The jig assembly of Claim 1, wherein the first member includes
2 alignment lines.

1 10. The jig assembly of Claim 2, further comprising a pad coupled
2 to at least one of the first and second members and configured to contact
3 the work piece.

1 11. The jig assembly of Claim 10, wherein the pad is a rubber
2 material.

1 12. The jig assembly of Claim 11, wherein the rubber material is
2 neoprene.

1 13. The jig assembly of Claim 1, wherein the size of the first
2 opening is sufficient to allow the hand-held power tool to create a 5 X 7 inch
3 recess in the work piece.

1 14. The jig assembly of Claim 1, wherein the first member includes
2 mounting apertures configured to receive fasteners for coupling the first
3 member to the work piece.

1 15. The jig assembly of Claim 1, wherein the at least one insert is
2 transparent.

1 16. The jig assembly of Claim 15, wherein the at least one insert is
2 formed from polycarbonate.

1 17. The jig assembly of Claim 1, wherein the at least one insert
2 includes a shoulder extending outwardly from an outer edge of the at least
3 one insert.

1 18. The jig assembly of Claim 17, wherein the first member includes
2 a recess proximate the first opening configured to receive the shoulder of the
3 at least one insert.

1 19. The jig assembly of Claim 1, wherein the at least one insert
2 includes mounting apertures configured to receive fasteners for coupling the
3 at least one insert to the work piece.

1 20. The jig assembly of Claim 19, wherein at least one of the
2 mounting apertures of the at least one insert includes a counterbore.

1 21. The jig assembly of Claim 1, wherein the at least one insert
2 includes alignment lines.

1 22. The jig assembly of Claim 1, wherein a first of the at least one
2 insert includes an opening having a first shape and a second of the at least
3 one insert includes an opening having a second shape.

1 23. The jig assembly of Claim 1, wherein the shape of the opening
2 of the at least one insert is one of square, rectangular, circular, oval,
3 triangular, heart-shaped, star-shaped, moon-shaped, flag-shaped, arrow-
4 shaped, letter-shaped, number-shaped, or symbol-shaped.

1 24. The jig assembly of Claim 1, wherein the at least one insert
2 includes a third opening.

1 25. The jig assembly of Claim 1, further comprising a sub-base
2 configured to couple to and support the hand-held power tool as the tool is
3 maneuvered across the first member.

1 26. The jig assembly of Claim 25, wherein the sub-base is
2 substantially planar and comprises a first leg and a second leg arranged
3 substantially perpendicular to and co-planar with one another.

1 27. The jig assembly of Claim 26, wherein the sub-base further
2 comprises a circular base proximate the intersection of the first leg and the
3 second leg and substantially co-planar with the first and second legs.

1 28. The jig assembly of Claim 27, wherein the sub-base includes an
2 opening located near the center of the circular base configured to allow at
3 least a portion of the hand-held power tool to pass therethrough.

1 29. The jig assembly of Claim 28, wherein the sub-base further
2 comprises mounting tabs configured to couple the sub-base to the hand-held
3 power tool.

1 30. The jig assembly of Claim 1, further comprising a retainer ring
2 configured to be coupled to the work piece.

1 31. A jig kit for use with a work piece and a hand-held power tool
2 including a cutting bit, the jig kit comprising:
3 a top member having a first opening and configured to be
4 positioned adjacent a first side of the work piece;
5 a plurality of inserts, each insert being configured to fit within
6 the first opening of the top member and including a second opening; and
7 a bottom member adapted to be coupled to the top member and
8 configured to be positioned adjacent a second side of the work piece;
9 wherein at least one of the first opening and second openings is
10 configured to allow a portion of the hand-held power tool to pass
11 therethrough to contact the work piece and to act as a guide for the hand-
12 held power tool as it removes material from the work piece.

1 32. The jig kit of Claim 31, wherein the top member and the bottom
2 member are coupled together with fasteners.

1 33. The jig kit of Claim 32, wherein the fasteners are bolts and
2 nuts.

1 34. The jig kit of Claim 31, wherein a first of the plurality of inserts
2 includes an opening having a first shape and a second of the plurality of
3 inserts includes an opening having a second shape.

1 35. The jig kit of Claim 31, wherein at least one of the plurality of
2 inserts includes alignment lines.

1 36. The jig kit of Claim 31, wherein at least one of the top member,
2 the bottom member, and the plurality of inserts is substantially transparent.

1 37. The jig kit of Claim 31, wherein each of the plurality of inserts
2 includes a shoulder extending outwardly from an outer edge of the insert.

1 38. The jig kit of Claim 37, wherein the top member includes a
2 recess proximate the first opening configured to receive the shoulder of the
3 insert.

1 39. The jig kit of Claim 31, wherein the shape of the opening of at
2 least one of the plurality of inserts is one of square, rectangular, circular,
3 oval, triangular, heart-shaped, star-shaped, moon-shaped, flag-shaped,
4 arrow-shaped, letter-shaped, number-shaped, or symbol-shaped.

1 40. The jig kit of Claim 31, wherein at least one of the plurality of
2 inserts includes a third opening.

1 41. A system for removing material from a work piece, the system
2 comprising:
3 a hand-held power tool ;

4 a cutting bit operatively coupled to the hand-held power tool;
5 and
6 a jig assembly including:
7 a first member having a first opening and configured to
8 be positioned adjacent a first side of the work piece; and
9 at least one insert configured to fit within the first
10 opening of the first member and including a second opening
11 configured to allow at least one of the cutting bit and a portion of the
12 hand-held power tool to pass through the second opening and to act
13 as a guide for the hand-held power tool;
14 wherein the cutting bit is configured to remove material from
15 the work piece when the cutting bit is rotated by the hand-held power tool
16 and the cutting bit engages the work piece.

1 42. The system of Claim 41, further comprising a plunge router
2 coupled to the hand-held power tool and configured to maintain at least one
3 of the power tool and the cutting bit in a spaced relationship with the work
4 piece.

1 43. The system of Claim 42, further comprising a sub-base coupled
2 to the plunge router and configured to support the hand-held power tool as
3 the tool is maneuvered across at least one of the first member and the at
4 least one insert.

1 44. The system of Claim 41, wherein the cutting bit includes an
2 elongated shaft having a longitudinal axis extending between a proximal end
3 configured to be coupled to the hand-held power tool and a distal end
4 opposite the proximal end.

1 45. The system of Claim 44, wherein the cutting bit includes a
2 bearing coupled to the shaft intermediate the proximal end and the distal
3 end.

1 46. The system of Claim 45, wherein the cutting bit includes a
2 cutting portion coupled to the distal end of the shaft, the cutting portion
3 including:

4 a first flute having a first cutting edge extending a first radial
5 distance from the longitudinal axis of the shaft; and

6 a second flute having a second cutting edge extending a second
7 radial distance from the longitudinal axis of the shaft, the second distance
8 being less than the first distance.

1 47. The system of Claim 46, wherein the bearing of the cutting bit
2 is configured to contact the edge of one of the first opening and the second
3 opening to restrain the cutting bit from removing material from the work
4 piece beyond the edge of the one of the first opening and the second
5 opening and to restrain the cutting bit from removing material from at least
6 one of the first member and the at least one insert.